



Interim Action proposed for Central Facilities Area while groundwater issues are investigated

COMPREHENSIVE REMEDIAL INVESTIGATION

The final investigation for a waste area group in which:

- Assumptions that were defined for previous investigations and decisions are reviewed
- Combined impacts of all release sites are assessed
- A risk assessment is completed for the entire waste area group

NITRATES

Nitrates are chemical compounds containing nitrogen. Nitrates in water can cause severe illness in infants and domestic animals. Nitrates are found in irrigation and field runoff, septic systems, manure, industrial wastewater, and landfills.

INTERIM ACTION

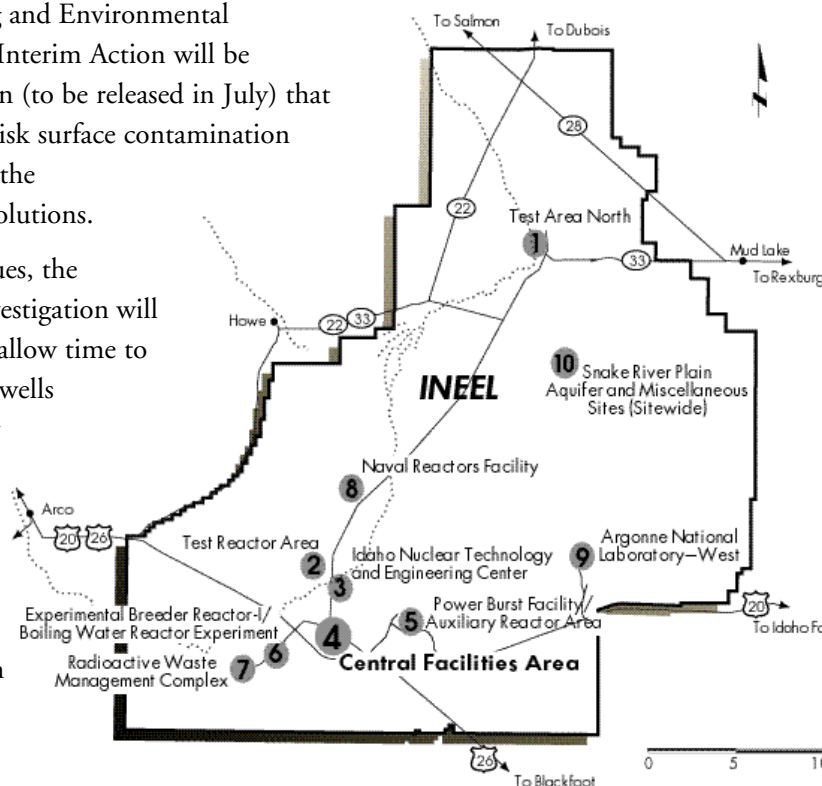
The purpose of an interim action is to cleanup sites to eliminate, reduce, or control hazards posed by contaminants at a site to expedite the completion of total site cleanup.

WASTE AREA GROUP

4

A **comprehensive remedial investigation** and feasibility study was conducted for the Central Facilities Area. As the investigation was nearing completion, **nitrates** were detected in the groundwater beneath the area. Because the comprehensive investigation of surface contamination was nearly complete, the agencies decided to address surface contamination separately from groundwater contamination. As a result, an **Interim Action** is being proposed to address surface contamination at the Central Facilities Area (Waste Area Group 4) at the Idaho National Engineering and Environmental Laboratory (INEEL). The Interim Action will be presented in a Proposed Plan (to be released in July) that will identify the estimated risk surface contamination poses to human health and the environment and possible solutions.

To address groundwater issues, the comprehensive remedial investigation will be delayed for two years to allow time to drill additional monitoring wells and collect data. This delay represents a departure from the original schedule identified in the Federal Facility Agreement and Consent Order. The comprehensive investigation is now scheduled to be completed in 2002.



BACKGROUND

The INEEL, showing the location of Waste Area Group 4 and other groups

The Central Facilities Area is located in the south-central portion of the INEEL, about 50 miles west of Idaho Falls, Idaho. It is the central support area for the INEEL, with administrative offices, research laboratories, a cafeteria, emergency and medical services, construction and support services, workshops, warehouses, and landfills. About 800 people currently work at the Central Facilities Area.

Industrial waste generated at the Central Facilities Area and some other areas of the INEEL was historically disposed of at the Central Facilities Area in landfills, a disposal pond, and drainfields. As a result, hazardous substances such as **metals**, **organic chemicals**, and **radionuclides** have contaminated soil, buildings, and other area facilities.

METALS

Certain metals can accumulate in the food chain and within human tissues, and damage life forms even at low concentrations. Examples of these are mercury, lead, and copper.

ORGANIC CHEMICALS

An organic chemical is any carbon-containing chemical. Some are toxic and carcinogenic. Examples of hazardous organic chemicals include such common substances as gasoline and paint thinner.

RADIONUCLIDES

A radionuclide is a radioactive form of an atom. Radionuclides may be extremely long-lived in the environment, can damage life forms, and can cause cancer. Examples of radionuclides are cesium-137 and iodine-131 (the number indicates the radionuclide's atomic weight).

AGENCIES

Agencies in this document refers to the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and the Idaho Department of Health and Welfare, Division of Environmental Quality.

Since 1991, investigators have identified 52 potential sites at the Central Facilities Area where contaminants could have been or were released to the environment. These sites included landfills, chemical spills, storage tanks, dry wells, a pond, and a sewage treatment plant. Of these 52 sites, 3 showed no evidence of any contamination, 9 sites do not pose a threat to human health or the environment, and 37 have already been cleaned up. The three remaining sites are contaminated with metals, radionuclides, or both. The three sites are:

- A disposal pond (CFA-04) contaminated with mercury
- A sewage-treatment plant drainfield (CFA-08) contaminated with cesium-137 and mercury
- A transformer yard (CFA-10) contaminated with copper and lead.



Aerial photo of the Central Facilities Area.

CONTAMINATED SITES

Contamination at the disposal pond, sewage-treatment plant drainfield, and transformer yard poses potential risks to human health and the environment. A description of the three sites and the cleanup alternatives the *Agencies* are considering follows.

DISPOSAL POND (CFA-04)

The disposal pond is a shallow basin with an area of 200 feet by 400 feet that is a maximum of 8 feet deep. It collected storm runoff from streets, parking lots, building roofs, and other areas at the Central Facilities Area, and liquid waste from operations at the Chemical Engineering Laboratory located about 400 feet to the north (active from approximately 1953 to 1969). In addition, the Chemical Engineering Laboratory used the disposal pond as a dumping site for solid wastes. The pond is no longer used.

The major contaminant at the disposal pond is mercury, which is present in soil that lines the pond. It is also present in surface soils north of the disposal pond, where contaminated soil from the pond was blown by wind.

About 3,000 cubic yards of mercury-contaminated soil was removed from the pond in 1994 and 1995. Data collected after the action indicated additional cleanup was necessary. The total volume of contaminated soil remaining at the site is approximately 8,290 cubic yards. Sampling data showed that most of the mercury contamination is contained in about 800 cubic yards.

SEWAGE TREATMENT PLANT DRAINFIELD (CFA-08)

The sewage treatment plant drainfield is an area of 200 feet by 1,000 feet that collected discharge from a sewage treatment plant. The treatment plant received ordinary sewage as well as wastewater from a laundry that washed radioactively contaminated protective clothing. The drainfield was constructed in sections between 1944 and 1961, and used until 1995.

The major contaminant at the sewage treatment plant drainfield is cesium-137, a radionuclide with a *half-life* of 30 years. Mercury contamination, also found at the site, poses a risk to the environment, though not to human health. The contaminants are found in the drain tiles and the soil in the drainfield. The soil is assumed to be contaminated to a depth of approximately 10 feet below the ground surface.

TRANSFORMER YARD (CFA-10)

The transformer yard is a 65 foot by 140 foot fenced yard adjacent to a metalworking shop. Although scrap metal or waste from the metalworking shop are not known to have been routinely dumped into the yard, the yard is contaminated with metals.

The major contaminants at the transformer yard are copper and lead. These metals contaminate the top 6 inches of the soil. The estimated volume of contaminated soil is 160 cubic yards.

CLEANUP ALTERNATIVES

NO ACTION: Only environmental monitoring and 5-year reviews would take place.

LIMITED ACTION: In addition to *environmental monitoring* and 5-year reviews, *institutional controls* would restrict access to the site.

EXCAVATION, TREATMENT AND DISPOSAL (ON-SITE OR OFF-SITE): Contaminated soil would be excavated, treated and disposed of either on or off the INEEL. At the Disposal Pond and the Transformer Yard, some or all of the contaminated soil would be stabilized with Portland cement before disposal. At the Sewage Treatment Plant Drainfield, contaminated soil and debris would be crushed, screened and sorted. Heavily contaminated material would be shipped to a disposal facility, and materials that pose no unacceptable risk would be returned to the excavation. Environmental monitoring and institutional controls would also take place.

CONTAINMENT: Contaminated soil would be capped with a protective cover designed to isolate the waste. The cover would have a life expectancy of 500 to 1,000 years. Long-term maintenance and monitoring would ensure the cover's integrity. Institutional controls would restrict access to the site and 5-year reviews would take place.

CONTAMINATED GROUNDWATER BENEATH THE CENTRAL FACILITIES AREA

Data collected during the past two years from two monitoring wells at the Central Facilities Area indicate that nitrate concentrations in groundwater beneath the CFA exceed the drinking water

ON-SITE CONTAMINATED SOIL DISPOSAL

The proposed INEEL *CERCLA* Disposal Facility (ICDF) was selected for on-site disposal of contaminated soils removed from the Central Facilities Area. The facility, which would cover about 54 acres south of the Idaho Nuclear Technology and Engineering Center, would accept only wastes generated within INEEL boundaries during CERCLA cleanup actions. The facility is currently under review as part of the Proposed Plan for the Idaho Nuclear Technology and Engineering Center. If developed, the ICDF would open to receive contaminated soil in 2003.

If the ICDF is not built or if its availability is delayed, off-site disposal would be used instead of on-site disposal. Several off-site disposal facilities are currently available.

HALF-LIFE

The half-life is the amount of time in which the radioactivity of a given substance, such as uranium, diminishes by half. After the first half-life, 50% of the initial radioactivity is gone; after the second half-life, 75% of the initial radioactivity is gone, 87.5% after the third half-life, and so forth. Cesium-137 has a half-life of 30.17 years.

ENVIRONMENTAL MONITORING

Sampling of soil, air, water, plants, or animals to detect changing conditions at a site that may require further evaluation.

INSTITUTIONAL CONTROLS

Limited actions that minimize potential dangers to human health and the environment. The controls can include long-term environmental monitoring, access restrictions (such as fencing or other physical barriers, warning signs, and land-use restrictions), and maintenance (such as runoff control and repairs to fencing).

CERCLA

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is a 1980 federal law that establishes a program to identify, evaluate, and clean up sites where hazardous or radioactive substances may have been released (leaked, spilled, or dumped) to the environment.

standard of 10 mg/L. The maximum concentrations of nitrates detected to date is 21.3 mg/L. Existing data is being evaluated and groundwater modeling conducted to determine the potential source of the nitrates. Currently, investigation centers on five potential sources – the disposal pond, the sewage-treatment plant drainfield, the sewage treatment lagoons and irrigation systems, the landfills, and the Idaho Nuclear Technology and Engineering Center.



FOR MORE INFORMATION

For further information, a briefing, or a tour on the contamination and cleanup process at of the Central Facilities Area, please call (208) 526-7225 , the INEEL Community Relations Office, or (800) 708-2680, the INEEL's toll-free number. An opportunity for public comment will be provided during public meetings on the Proposed Plan for cleanup of the Interim Action Central Facilities Area in August 1999. Information and comments obtained from the public about the cleanup of the Central Facilities Area, as well as previous focus group reviews of Proposed Plans for other cleanup work at the INEEL, will be used to shape the Central Facilities Area cleanup.

MORE INFO

The **INEEL**
ADMINISTRATIVE
RECORD can be
found at:

INEEL Technical Library
DOE Public Reading Room
1776 Science Center Drive
Idaho Falls, ID 83415
208-526-1185

Albertsons Library
Boise State University
1910 University Drive
Boise, ID 83725
208-385-1621

University of Idaho Library
University of Idaho Campus
434 2nd Street
Moscow, ID 83843
208-885-6344

and on the Internet at <http://ar.inel.gov>

The Central Facilities Area Proposed Plan will also be available
on the Internet at: <http://www.inel.gov/environment/em/pdf/cfaplan.pdf>

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